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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,544	10/07/2003	Vladimir Fridman	P-1187	4997
7590	05/07/2007	EXAMINER		
Scott R Cox LYNCH, COX, GILMAN & MAHAN, P.S.C. 500 W Jefferson Street Suite 2100 Louisville, KY 40202			NGUYEN, CAM N	
ART UNIT		PAPER NUMBER		
1754				
MAIL DATE		DELIVERY MODE		
05/07/2007		PAPER		

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/680,544

Filing Date: October 07, 2003

Appellant(s): FRIDMAN ET AL.

**MAILED**

**MAY 07 2007**

**GROUP 1700**

Scott A. Cox  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed August 23, 2006 appealing from the Office action mailed February 07, 2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,378,350	ZIMMERMANN ET AL.	01-1995
5,258,567	KERBY ET AL.	11-1993
4,212,771	HAMMER ET AL.	07-1980

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

- A. Claims 1-2, 5-8, 10-13, & 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmermann et al., "hereinafter Zimmermann", (US Pat. 5,378,350) taken together with Kerby et al., "hereinafter Kerby", (US Pat. 5,258,567).

Zimmermann discloses a catalyst comprising chromium and aluminum oxides, at least one cesium metal compound promoter in an amount of 0.1 to 10% by weight of the catalyst, calculated as Cs<sub>2</sub>O, and at least one zirconium metal compound as additional promoter in an amount of 0.1 to 15% by weight of the catalyst, calculated as ZrO<sub>2</sub> (see col. 7, claim 1).

Zimmermann further discloses that the catalyst comprising an Al<sub>2</sub>O<sub>3</sub> support with 10 to 50% by weight of chromium oxide, calculated as Cr<sub>2</sub>O<sub>3</sub>; 0.1 to 5% by weight of a zirconium compound, calculated as ZrO<sub>2</sub>; and 0.1 to 10% by weight of a cesium compound, calculated as Cs<sub>2</sub>O (see col. 7, claim 2). Zimmermann also discloses that the catalyst can contain additional promoters

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such as scandium, yttrium, lanthanum, titanium, zirconium or hafnium, individually or in combination (see col. 2, ln 21-25). Zimmermann discloses that sodium, potassium, calcium or barium compounds are suitable promoters from the group of alkali or alkaline earth compounds with cesium being more preferably promoter compound for providing a better result and more effective catalyst (see col. 2, ln 12-19).

Regarding claim 1, applicants amended the claims changing from “comprising” to “consisting essentially of” language is noted. The “consisting essentially of” language while limits the claim to specified ingredients or components and those that do not affect the basic and novel characteristics of a composition. See *Ex parte Davis et al.*, 80 USPQ 448. When applicants contend that modifying components in the reference composition are excluded by the recitation of the “consisting essentially of”, applicants have the burden of showing the basic and novel characteristics of their composition, i.e., a showing that the introduction of these components would materially change the characteristics of applicants’ composition. While applicants are excluding other metal component, such as cesium compound, applicants have not yet shown that the additional material in the catalyst composition of Zimmermann is materially affects applicants’ catalyst composition.

Regarding claim 13, upon further review of Zimmermann reference, it appears that while cesium compound is a more preferable promoter compound for his catalyst composition, other alkali or alkaline earth metal compounds (which includes sodium, potassium, and magnesium the applicants claiming) can also be used as a promoter as well. In Example 1 of the Zimmermann reference, it shows the final catalyst composition of catalyst 1 prepared contains an alumina support, chromium, zirconium, and potassium promoter. In Example 2, same as catalyst 1, but

with sodium promoter. The concentrations of the potassium and sodium promoters in examples 1 and 2 are 2% wt., respectively.

Thus, the only difference between the claims and the Zimmerman reference, is that Zimmerman does not disclose using the magnesium and alkali metal promoter (sodium or potassium) together, and he does not disclose the magnesium concentration either. It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have added magnesium to the catalyst of Zimmermann in order to achieve an improved catalyst having promoted activities because it is known as useful catalyst promoter (or modifier), as evidenced by Kerby (see Kerby at col. 12, claims 12-14).

The claimed chromium and zirconium concentrations are met by the teachings of the reference since they fall within the disclosed ranges (see above).

Regarding claim 5, it is considered the process limitation in the claim regarding how the carrier material is made has no bearing on the patentability of the claimed catalyst. Since the disclosed carrier material is the same as the claimed carrier, thus provides for the same catalyst.

With respect to the “chromium material” listed in claims 6 & 8, it is considered that the claimed chromium materials as listed are process limitation. Since the instant claims are called for “a catalyst”, the process limitation as being claimed has no bearing on the patentability of the claimed catalyst.

Regarding claim 28, Zimmerman does not disclose the claimed alkali metal promoter concentration. It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have optimized the alkali metal promoter concentration in

Zimmerman in order to achieve an effective catalyst because it is a result effective variable, in view of *In re Boesch*.

B. Claims 3-4, 15-20, 24, & 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmermann et al., "hereinafter Zimmermann", (US Pat. 5,378,350) *taken together with* Kerby et al., "hereinafter Kerby", (US Pat. 5,258,567), as applied to claims 1-2, 5-8, 10-13, & 28 above, and further in view of Hamner (US Pat. 4,212,771).

Zimmermann discloses a catalyst (as described above) in combination with the magnesium and alkali metal components incorporated, which is disclosed by Kerby as discussed above (see the precedent paragraph), except for the carrier properties.

It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have utilized such known carrier in Zimmermann because it is known as useful catalyst carrier, as evidenced by Hamner (see Hamner at col. 2, ln 41-61, col. 3, ln 24-27, & col. 6, Table I).

#### **(10) Response to Argument**

Applicants' arguments in the brief filed on August 23, 2006 have been fully considered, but not deemed persuasive because of the following reasons.

First, applicants urged, "Zimmermann et al. teach away from the use of magnesium, as a promoter with zirconium by requiring cesium to be added as a promoter instead of any alkaline earth metal..." (applicants' brief on page 14).

While “cesium” is required in the catalyst composition of Zimmermann et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the catalyst of Zimmermann by substituting the “cesium” with a known magnesium modifier as taught by Kerby et al. because magnesium is known as useful catalyst modifier as evidenced by Kerby et al. (see Kerby at col. 12, claim 14).

Second, applicants argued, “the examiner was picking and choosing the Mg modifier out of a list of 27 modifiers taught in the Kerby et al. reference, and that magnesium is merely one of 27 possible options for additional modifiers that are disclosed by Kerby et al.” (applicants’ brief on page 21).

It is considered the use of “Cs” or “Mg” or any particular promoters for making catalysts is only a matter of choice. Since Mg is shown by Kerby et al. as a suitable catalyst modifier among the suitable catalyst modifiers, one of ordinary skill in the art at the time the invention was made would have been obviously tried and make use of such known modifier to achieve an effective catalyst material in Zimmermann et al. Further, Zimmermann et al. is not prohibiting or excluding other promoters other than Cs and other components contained in his catalyst either.

In response to applicants’ argument regarding the transitional phrase “consisting essentially of” in the claims, the “consisting essentially of” language while limits the claim to specified ingredients or components and those that do not affect the basic and novel characteristics of a composition, when applicants contend that modifying components in the reference composition are excluded by the recitation of the “consisting essentially of”, applicants have the burden of showing the basic and novel characteristics of their composition, i.e., a showing that the introduction of these components would materially change the characteristics of

applicants' composition. While applicants are excluding other metal component, such as cesium compound, applicants have not yet shown that the additional material in the catalyst composition of Zimmermann is materially affects applicants' catalyst composition.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

**Contacts**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Cam N Nguyen, whose telephone number is 571-272-1357. The examiner can normally be reached on M-F, 9:00 AM - 6:30 PM, at alternative work site.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

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Respectfully submitted,

Cam N. Nguyen  
Primary Examiner  
Art Unit: 1754

Nguyen/cnn

November 27, 2006

Conferees:

  
STANLEY S. SWANSON  
SPOV 1754

  
Kathryn Gorges  
TC 1700 TQS